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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,580	10/24/2003	Boris S. Jacobson	RTN-183AUS	9035
33164 7590 12/29/2008 RAYTHEON COMPANY C/O DALY, CROWLEY, MOFFORD & DURKEE, LLP 354A TURNPIKE STREET SUITE 301A CANTON, MA 02021			EXAMINER CAVALLARI, DANIEL J	
			ART UNIT 2836	PAPER NUMBER
			NOTIFICATION DATE 12/29/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@dc-m.com
amk@dc-m.com

Office Action Summary

Application No.

10/692,580

Applicant(s)

JACOBSON ET AL.

Examiner

DANIEL CAVALLARI

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 10/15/2008
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/15/2008 has been entered.

Information Disclosure Statement

The information disclosure statement(s) filed 10/15/2008 has been considered. However, the document "Notice of Acceptance dated May 15, 2008" has not been considered since no such document could be found. The Examiner notes that a "Notice of Acceptance" dated April 30, 2008 was provided.

Response to Arguments

Applicant's arguments filed 10/10/2008 have been fully considered but they are not persuasive.

It is noted that applicant has amended independent claims 1, 7, 15, and 33 however arguments in regard to the amendments are herein addressed.

Applicant argues "As FIG.2 clearly shows, there is only a single interconnect between any two subsystem components and between a subsystem component and the common source." It is arguable whether this is clearly shown, see Figure 2 below. Figure 2 appears to show only a single connection between subsystems and between subsystems and the common power source

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but the specification and other figures teach that this is not the case. In fact, each connections line drawn in figure 2 is representative of multiple connections.

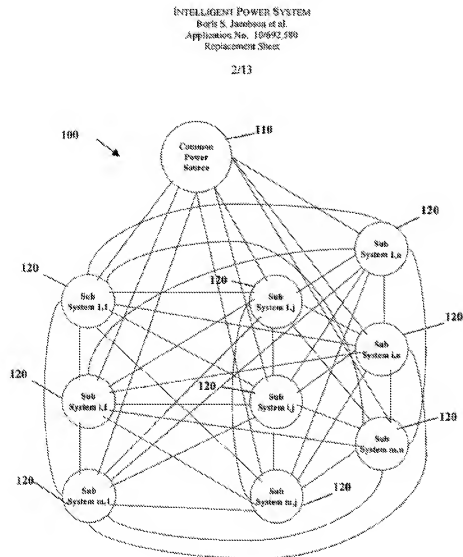


Figure 2

The specification states “**Each line** between subsystem 120 in Figure 2 represents **multiple power and signal connections between the subsystems 120.**” (see figure 2 above). So, although figure 2 may clearly show a single interconnection between any two subsystems,

the specification clearly states that each of those lines comprises multiple connections. It appears that figure 5 of applicant's invention more clearly shows the connections between the subsystems (see figure 5 below).

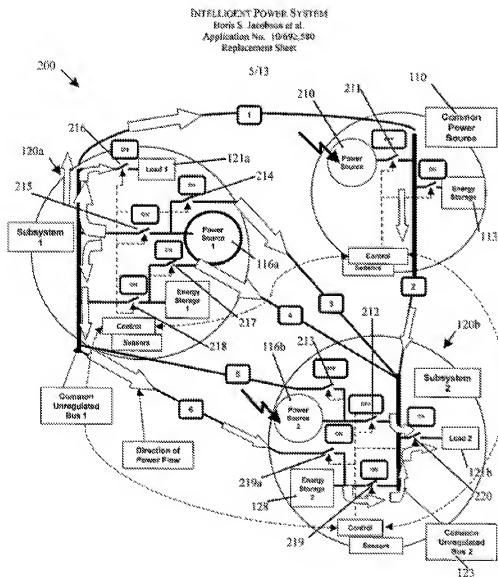


Figure 5

Figure 5 above shows the connection of subsystems (120a, 120b) and four power connections between 120a and 120b (see connections marked by REF# 3, 4, 5, and 6 in Figure 5 above).

It is further noted that the previous amendment to specification inappropriately added new matter to applicant's invention, more specifically, the mathematical equations limiting maximum number of interconnect lines [noting the confusion or necessity of an equation to determine the maximum number of interconnect lines if that number is "1", "a single interconnect between two subsystems" (see applicant's Remarks, page 12)].

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 7, 15, 19 and 33 recite "such that the plurality of interconnection lines comprise no more than $k*((k-1)/2)$ interconnection lines" however the specification as originally filed 10/24/2003 does not teach said mathematical equation which determines the interconnections.

Applicant inappropriately amended the specification on 8/4/2006 attempting to add said interconnection equation which fails to appear in the original specification of 10/24/2003.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claims 1-33

Claims 1, 7, 15, and 33 recite:

*"the plurality of power subsystem components (noting a lack of antecedent basis for the term "power subsystem components") comprising k subsystem components, **wherein each subsystem is connected to each other subsystem (ie. REF# 120 to 120 of figure 2 and REF# 120a to 120b figure 5) solely via respective one of the plurality (noting it is unclear what is meant by being solely connected by "respective" and "one of the plurality") of interconnection lines of a respective one of the power source regulated buses, such that the plurality of interconnection lines (noting a lack of antecedent basis for this term) comprises no more than $k \cdot [(k-1)/2]$ (noting this equation fails to be taught in applicant's originally filed specification) interconnection lines"***

In addition to the above notes in italics, the equation itself " $k \cdot [(k-1)/2]$ " does not provide the correct number of interconnections. Figure 5 (see below) show two subsystems 120a and 120b. Therefore, according to applicant's equation, the number of interconnections is equal to $2 \cdot [(2-1)/2] = 1$ (noting that mathematically, this is readily understood by those of skill in the art). However, Figure 5 below shows two subsystems 120a, 120b and 4 interconnections (labeled 3, 4, 5, and 6). Furthermore, applicant stated that "As FIG.2 clearly shows, there is only a single

interconnect between any two subsystem components and between a subsystem component and the common power source" making it unclear why an equation to determine the maximum number of interconnections is needed.

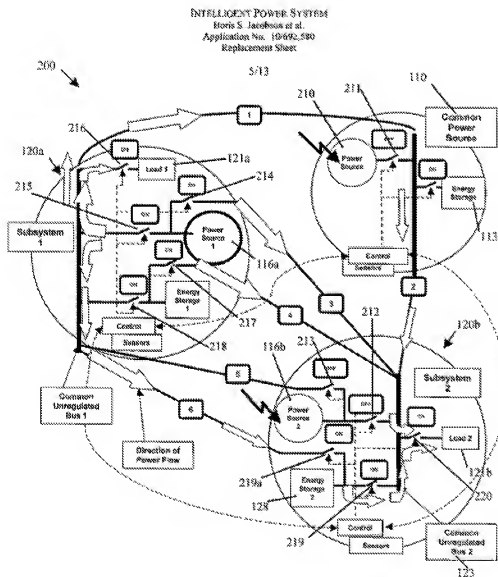


Figure 5

Therefore, the claim will be examined as best understood (as shown in figure 5) wherein "k" is considered a separate and discrete variable upon each recitation in the claim.

In regard to claim 1

Claim 1 states “the plurality of power subsystem components comprising k subsystem components” is unclear. Particularly, it is unclear how the “subsystem components” comprise themselves as stated wherein the “subsystems” comprise subsystem components, and more particularly, k of them.

There is a lack of antecedent basis for the term “the plurality of power subsystem components” since “a plurality of power subsystem components” is not previously disclosed. There is also a lack of antecedent basis for the term “the plurality of interconnection lines” since “a plurality of interconnection lines” is not previously disclosed (noting that “a plurality of independent interconnection lines” is disclosed but not “a plurality of interconnection lines”). It is acknowledged that the following components are disclosed, but no “a plurality of power subsystem components”:

1. a power system common power source subsystem
2. a power source unregulated bus
3. a plurality of power source regulated buses
4. a plurality of independent interconnection lines
5. a plurality of subsystems
6. a common power source
7. k subsystem components

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 33 is rejected under 35 U.S.C. 102(b) as being anticipated by Williams et al.
(hereinafter referred to as Williams) (US 5,422,561).

In regard to Claim 33

A power system comprising:

At least one common power source component (source of power not shown (ie utility), figure 3) having a first interconnect (220KV lines, figure 3) with a plurality of power connections (109). A plurality of power system subsystem components (figure 2), the plurality of power subsystem components comprising k power subsystem components (see figure 12) (noting that the power subsystem components comprise themselves and there are “k” of them wherein “k” is any value, as shown in figure 12) each one of the plurality of power subsystem components having a second interconnect (see bottom most bus 106, figure 2) with a plurality of power connections (ie. switches 109, transformer connections 108), wherein each one of the second interconnects connects to the first interconnect of the at least one common power source component solely via a respective power connection and each one of the second interconnects solely connected to a respective second interconnect of each other one of the plurality of power subsystem components solely via a respective power connection (noting the power connections connecting all buses to each other, ie. 104 to 106

and 106 to 106, figure 3), such that the plurality of power connections comprises no more than $k * [(k-1)/2]$ power connections (noting that "k" in the equation is independent of "k" subsystems as taught by applicant's invention wherein k is any value, ie. 100 so that the interconnections equal $100 * [(100-1)/2]$); each one of the plurality of power connections of the first interconnect comprising a connection to a plurality of subsystem regulated buses (106, figure 2) and comprising a connection to subsystem unregulated buses (104, figure 2) and each one the plurality of power connections of the second interconnect comprising a connection to at least one of the plurality of subsystem regulated buses (noting the plurality of 106 buses, figure 2) and comprising a connection to the subsystem unregulated bus (noting that all components between figure 3 and figure 2 are electrically connected to each other forming a single power distribution network).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sicwert et al. (US 5,892,299), Hart (US 6,236,949), and Cole et al. (US 2,135,250).

In regard to Claims 1, 7, 8, 15, 16, 17, 18, 19, & 25

Siewert et al. (hereinafter referred to as Siewert) teaches a power system common power source subsystem comprising:

- A power source unregulated bus, read on by SPSS power bus (1210) (See Figure 12)
- A plurality of power source regulated buses [read on by buses 1220 (See Figure 12 and note the plurality of regulated buses 1220, as regulated by regulator (400) (See Figure 12 & Column 11, Lines 23-58)] each respective power source regulated bus comprising a plurality of independent interconnection lines having a plurality of interconnection lines (read on by the interconnection lines between 1220 and 500) to connect a plurality subsystems (read on by 500 and "Equipments 1 to J" and "Equipments (M-K) to M") to each other and to a common power source (200), the plurality of power subsystem components comprising k subsystem components (noting that "k" can be set to any value and is herein set to the value shown in figure 12) wherein each subsystem is connected to each other subsystem solely via a respective one of the plurality of interconnection lines of a respective one of the power source regulated buses (1220), such that the plurality of interconnection lines comprises no more than $k * [(k-1)/2]$ interconnection lines (noting "k" is independent of the "k subsystems" and further noting that k can be set to any value, ie. 100) .
- At least one power source (200) having an output to converter (330) (See Figure 12)
- A first group comprising a switch (260) of component (230) coupling the power source (200) to the unregulated bus (See Figure 2 and Column 4, Line 52 to Column 5, Line 21)
- At least one regulator, read on by regulator power conditioner (400) (See Figure 12) having an input from bus (1210) and an output to the regulated bus (1020). An

embodiment of the power conditioner (400) taught incorporating a regulator (440) (See Figure 4 & Column 7, Lines 26-35).

- A second group comprising a switch (500) coupling an input of the regulator (400)
- At least two power system subsystem components, read on by the branch N and subgroups 1-J & M-K (See Figure 12 & Column 10, Line 27-46 & Column 11, Lines 23-34) in which all of the subsystem components are present that are present in the main system [The examiner notes that Siewert teaches N which is representative of any number therefore reads on two or more].

Siewert fails to teach:

- A second group comprising a switch located between the regulator input and the unregulated bus and a third group comprising a switch located between the regulator output and the regulated bus.
- A controller coupled with the first, second, and third group of switches as well as coupled to a sensor.

Siewert discloses a switch (500) located between a power conditioner and the power bus (1210), the power bus connected to the power conditioner (400) (Regulator) and a second switch (500) coupled to the power conditioner (400) via the bus (1220).

Siewert fails to teach switches coupled to the input and output of the regulator, thereby coupling the input and the output do to the unregulated bus (1210) and the regulated bus (1220).

Cole et al. (hereinafter referred to as Cole) teach a power supply system in which a regulator (27) is connected to an unregulated bus (20) via switch (23) and a regulated bus (22) through a second switch (28) (See Figure 1 & Page 3, Lines 34-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate switches between the regulator taught by Siewert between the regulator input and the unregulated bus and the regulator output and the regulated bus, as taught by Cole. The motivation would have been to provide a means to service the regulator (See Cole, Page 1, Lines 33-41).

Siewert teaches switches (i.e. 260) that can operate “automatically” (See column 5, Lines 8-21) as well as the isolation device (530) operating by a control means (See Column 8, Lines 3-18). Siewert further teaches sensors read on by feedback provided by the PEE DC bus used to control the power conditioners (400) (See Column 10, Lines 47-67) as well as a controller (1240) in which the sensors are connected via electrical lines (1215, 1225, 1205) (See Column 11, Lines 35-58).

Siewert fails to teach the controller coupled with the first, second, and third group of switches. Hart teaches switches, read on by the circuit breakers (44-47) all electrically connected via bus 7 to a controller, read on by a remote computer (See Figure 1 & Column 6, Line 26 to Column 7, Line 26 & Column 7 Lines 50-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a connection between the controller, taught by Siewert, as well as the switches, also taught by Siewert, in the common fashion as taught by Hart in which a controller

is attached to all the switches. The motivation would have been to provide an automated means of operating the switches in which Siewert is silent (See Siewert, Column 5, Lines 8-21)

Siewert further teaches:

In regard to Claims 2, 5, 9, 13, 20, 23, 26, & 30

- A stabilizer, read on by the source converter (300) (See Figure 12) which comprises a switch (328) and a DC/DC converter (326) as illustrated in component (324) (See Figure 3B & Column 6, Lines 53-64) and having an input coupled to a power source (200) and an output with a forth group comprising of a switch (328) (See Figure 3B) coupling the stabilizer to the unregulated bus (1210) (See Figure 12).

In regard to Claims 3, 6, 10, 14, 21, 24, 27, & 31

- The power system further comprising at least one storage element, as shown in Figure 3A, component (380), labeled "internal DC" which is described in the specification as comprising a battery (See Column 4, Line 62 to Column 5, line 7) and the source converter (300) being coupled (including storage element) being coupled to the regulator (400) (See Figure 12) wherein the storage element is coupled to the regulated bus via a forth group comprising a switch (385).

In regard to Claims 4, 12, 22, & 29

- The power source (200) comprising a battery (See Figure 2, component 220 & Column 4, Line 62 to Column 5, line 7)

In regard to Claims 11 & 28

- A load, read on by the protected electrical equipment (PEE) (See Figure 12 & Column 3, lines 46-61) and a fifth group comprising at least one switch (500), as shown located between the load (110) and the regulated bus (1220) (See Figure 12)

In regard to Claim 32

- At least one mode in which a single power source (1) (200) or another mode in which multiple power sources (N) are used to supply to the power system (See Column 10, lines 8-26).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Cavallari whose telephone number is 571-272-8541. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel Cavallari/

December 18, 2008

/Stephen W Jackson/
Primary Examiner, Art Unit 2836